REMARKS

Applicants have carefully reviewed and considered the final Office Action of December 4, 2008. The various issues raised in the Office Action are discussed in detail in the subsections presented below.

Claims 1, 7 and 9 have been amended and new Claims 22 – 33 have been added to more particularly define Applicants' invention.

Support for the amendments to Claims 1, 7 and 9 can be found in the specification at least at page 3, lines 33-36; page 4, lines 24-26; page 7, lines 27-35; page 8, lines 24-28; and page 16, lines 17-18.

Support for new Claim 22 can be found in the specification at least in original Claim 1; page 4, lines 24-26; page 5, line 33 to page 6, line 1; page 7, lines 34-36; page 8, lines 24-28; and page 12, lines 26-37.

Support for new Claim 23 can be found in the specification at least in page 7, lines 36-39. Support for new Claim 24 can be found in the specification at least in page 15, lines 33-35 and Fig. 2. Support for new Claim 25 can be found in the specification at least in page 14, line 23. Support for new Claim 26 can be found in the specification at least in page 7, lines 29-32. Support for new Claim 27 can be found in the specification at least in page 8, lines 10-12. Support for new Claim 28 can be found in the specification at least in page 9, lines 3-5. Support for new Claim 29 can be found in the specification at least in page 14, line 38 to page 15, line 1. Support for new Claim 30 can be found in the specification at least in page 11, lines 5-7 and lines 26-28.

Support for new Claims 31 - 33 can be found in the specification at least in original Claim 1; page 4, lines 24-26; page 5, line 33 to page 6, line 1; page 8, lines 24-28; page 15, line 15 to page 16, line 29; Examples 4 - 7 and Figure 2.

Claims 12 – 21 were previously cancelled. Claims 1 – 11 and 22 – 33 remain in the case and are presented for consideration.

**A. REJECTION OF CLAIMS 1, 2, 4 AND 6 UNDER 35 U.S.C. §102(B) AS ANTICIPATED BY U.S. PATENT NO. 4,496,415 TO SPRENGLING**

The Examiner asserts that Sprengling meets all the limitations of Applicants' claim 1. However, Applicants respectfully submit that Sprengling fails to teach or suggest the method claimed in Applicants' amended independent claim 1.

Specifically, Sprengling does not disclose the step of heating a web of yarns coated with a powder to a temperature sufficient to melt the powder into a smooth surface layer and convert the yarns into a matrix within which reinforcing material is embedded.

Rather Sprengling discloses applying a dry resin powder and then melting the powder to distribute the resin throughout a laminate. (*See* column 2, lines 7-8, lines 30-31 and lines 39-40) The dry resin powder serves as a binder to bond fibrous substrates in a unitary structure. (*See* column 6, lines 38-40 and lines 56-57)

In contrast, Applicants method includes depositing a powder of an organic material on a web of yarns and then melting the powder to form a smooth surface layer. This smooth surface layer advantageously improves the surface appearance, makes it easier to apply patterns, and makes it easier to keep the surface clean. (*See* page 1, lines 30-39) Applicants' method also makes it possible to provide composite sheets that have good impact resistance, are capable of being molded and have a coating that is easy to repair, (*See* page 13, lines 9-12 and page 13, lines 1-5) advantages that are neither taught nor suggested by Sprengling.

Moreover, Sprengling fails to teach or suggest a method which includes the steps of depositing a web of yarns comprising "an organic material capable of forming a matrix", and heating this web of yarns "to convert the yarns into a matrix within which reinforcing material is embedded" as recited in amended Claim 1.

In light of the above, Applicants submit that Claim 1 is neither anticipated nor obvious in view of Sprengling, and is in condition for allowance. Claims 2, 4 and 6 depend directly or indirectly from Claim 1, and are therefore also in condition for allowance for at least the above reasons.

**B. THE REJECTION OF CLAIMS 5 AND 7 - 11 UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER U.S. PATENT NO. 4,496,415 TO SPRENGLING, ET AL**

Initially, Applicants note that Claims 5 and 7- 11 depend directly or indirectly from amended Claim 1 and respectfully submit that Claims 5 and 7 – 11 are in condition for allowance for at least those reasons.

Regarding Claims 5, 7, 9; the Examiner concludes the amount and types of reinforcing material, and coating layer thickness or amount applied would obviously have been dependant upon the end-use, with optimization determined by routine experimentation. The Office further states the selection of suitable amounts of each ingredient in a formulation is deemed obvious optimization, In re Peterson 65 USPQ2d 1379. The Office concludes it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Sprengling by optimizing amount and types of reinforcing material, and coating layer thickness or amount applied, and other obvious parameters to form a desired end product.

As to Claim 5, as noted above, Applicants submit that Sprengling fails to teach or suggest a process that begins with "a web of continuous yarns ... comprising at least one organic material capable of forming a matrix" as recited in amended Claim 1, from which Claims 5 indirectly depends, let alone a process that begins with the very particular web of yarns recited in dependent Claim 5, i.e. wherein "the web comprises between 20 and 90%, preferably between 30 and 85%, by weight of reinforcing material." Applicants therefore submit that Claim 5 is in condition for allowance in its own right.

As to Claim 7, Applicants submit that Sprengling nowhere teaches or suggests depositing a web of intermingled yarns of any kind, let alone a web of yarns that includes filaments of a thermoplastic organic material that is capable of forming a matrix. These filaments of thermoplastic organic material advantageously form the matrix of the composite sheets, a feature neither taught nor suggested by Sprengling. In particular, Applicants submit that nowhere does Sprengling teach or suggest a process that employs the very particular web of yarns recited in Claim 7, i.e. wherein "the web comprises at least 50% by weight of intermingled yarns of glass filaments and of filaments of a thermoplastic organic material capable of

forming a matrix." One cannot optimize a property that is not taught. Applicants therefore submit that Claim 7 is in condition for allowance in its own right.

Regarding Claim 8, Claim 8 depends from Claim 7, and therefore, Applicants submit, Claim 8 is also in condition for allowance for at least those reasons.

As to Claim 9, as noted above, Sprengling teaches distributing a powder resin throughout a laminate article to bind sheets and individual fibers together. Sprengling neither teaches nor suggests depositing a powder on a web and heating the powder to form a smooth surface layer thereon, let alone the very particular step of depositing the powder "to produce a smooth surface layer with a thickness of between 0.3 and 1 mm, preferably between 0.6 and 0.8 mm" as recited in amended Claim 9. As noted in Applicants' disclosure, this smooth surface layer advantageously improves the surface appearance, makes it easier to apply patterns, and makes it easier to keep the surface clean. (*See* page 1, lines 30-39) Moreover, Applicants' method makes it possible to provide composite sheets that have good impact resistance and have a coating that is easy to repair, (*See* page 13, lines 9-12 and page 14, lines 1-5) advantages that are neither taught nor suggested by Sprengling. Applicants therefore submit that Claim 9 is in condition for allowance in its own right.

As to Claims 10 and 11, Applicants note that Claims 10 and 11 depend directly or indirectly from Claim 9. Therefore, Applicants submit, Claims 10 and 11 are also in condition for allowance for at least those reasons.

### C. THE REJECTION OF CLAIM 3 UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER U.S. PATENT NO. 4,496,415 TO SPRENGLING, ET AL IN VIEW OF U.S. PATENT NO. 6,998,155 TO HAGGQUIST ET AL

The Examiner cited Sprengling for the same reasons previously discussed. The Examiner conceded that while thermoset resins are explicitly cited and exemplified, thermoplastic resins are not. The Office takes the position that the use of any resin to act as the desired function of the resins of Sprengling would have been obvious modification within the purview of one skilled in the art.

The Office goes on to state, nonetheless Haggquist is cited because it teaches a similar concept of applying resin particles into a continuous woven material which is subsequently fixed. The Office further states that, as apparent

from the laundry list on col. 7 – bridging 8, either thermoplastic or thermoset particles can be successfully applied, establishing an equivalence that either may be employed for applications to wovens, sheets, yarns, etc (col. 3, 17 – 22). The Office concludes it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the process of Sprengling by incorporating thermoset or thermoplastic particles given the equivalence of use disclosed by Haggquist because of the expectation of achieving successful and predictable end results.

Initially, Applicants note that Claim 3 depends indirectly from amended Claim 1 and submit that Claim 3 is in condition for allowance for at least those reasons.

As Applicants note above, Sprengling does not disclose a method in which a web of yarns coated with a powder is heated to a temperature sufficient to melt the powder into a smooth surface layer and convert the yarns into a matrix within which reinforcing material is embedded. Applicants submit that Haggquist et al. fail to remedy the deficiencies of Sprengling.

Haggquist el al. teach a process for producing woven materials incorporated with a particulate solid. (Abstract) The particulate solid may, for example, have odor-absorbing properties particularly useful in garment manufacture. In one embodiment, "a chemical binder is used to fix the particulate solid on and/or in a woven material". (column 7, lines 60 – 62) Applicants submit that the sole function of the list of suitable chemical binders taught by Haggquist et al., is to bind a particulate solid on and/or in a woven material. Haggquist nowhere teaches or suggests that the materials are suitable for forming a smooth surface layer, or that they can be interchangeably used to do so.

In contrast to Haggquist, the powder employed in Applicants' invention is, in and of itself, capable of forming a smooth surface layer, which advantageously improves the appearance of a composite sheet. In particular, Applicants submit that Haggquist et al. nowhere teach or suggest depositing a powder capable of forming a smooth surface layer wherein the powder is "selected from polyolefins, polyamides, polyesters and PVC" as recited in dependent Claim 3.

In view of the above, Applicants submit that Claim 3 is in condition for allowance in its own right.

## D. CONCLUSION

In summary, all the pending claims patentably distinguish over the prior art and should be formally allowed. Upon careful review and consideration it is believed the Examiner will agree with this proposition. Accordingly, the early issuance of a formal Notice of Allowance is earnestly solicited.

Any fees required in connection with this Response may be debited to Deposit Account 50-0568.

Respectfully submitted,

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Kathryn W. Grant
Reg. No. 33,238

Owens Corning
Patent Dept. Bldg. 21-0
2790 Columbus Road
Granville, Ohio 43023
(740) 321-7213